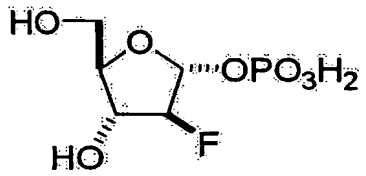
Claims

1. α-1-Phosphorylated-2-deoxy-2-fluoroarabinoside represented by formula (I):

[F1]

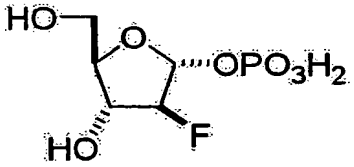


(I)

or a salt thereof.

2. A method for stereoselectively producing α-1-phosphorylated-2-deoxy-2-fluoroarabinoside represented by formula (I):

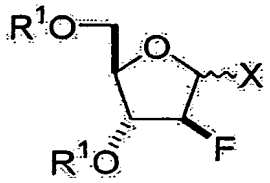
[F5]



(I)

which method comprises hydrolyzing a 2-deoxy-2-fluoroarabinose derivative represented by formula (III):

[F2]

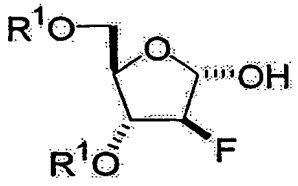


(III)

(wherein R^1 represents a hydroxyl-protective group, and X

represents a leaving group), thereby stereoselectively yielding an α-1-hydroxyl isomer represented by formula (IV):

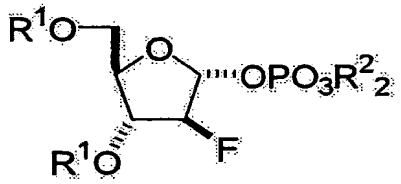
[F3]



(IV)

(wherein R^1 has the same meaning as defined above); phosphorylating the compound of formula (IV), thereby forming an α-1-phosphorylated-2-deoxy-2-fluoroarabinoside derivative represented by formula (V):

[F4]

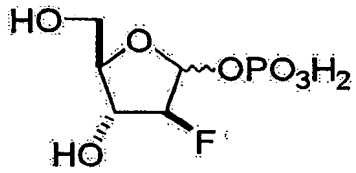


(V)

(wherein R^1 has the same meaning as defined above, and R^2 represents a hydrogen atom or a phosphate-protective group); and subsequently removing the hydroxyl-protective group(s) and/or the phosphate-protective group(s).

3. A method for producing a mixture of α- and β-isomers of 1-phosphorylated-2-deoxy-2-fluoroarabinoside represented by formula (V'):

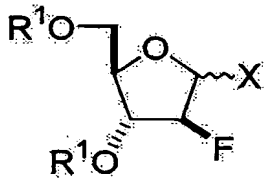
[F8]



(V')

which method comprises phosphorylating, in the presence of a strong acid salt, a 2-deoxy-2-fluoroarabinose derivative represented by formula (III):

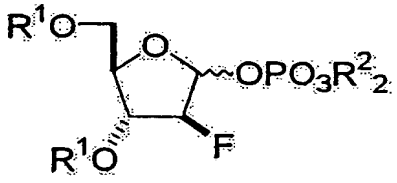
[F6]



(III)

(wherein R^1 represents a hydroxyl-protective group, and X represents a leaving group), thereby yielding a mixture of α- and β-isomers of a 1-phosphorylated-2-deoxy-2-fluoroarabinoside derivative represented by formula (V):

[F7]



(V)

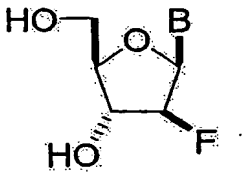
(wherein R^1 has the same meaning as defined above, and R^2 represents a hydrogen atom or a phosphate-protective group); and subsequently removing the hydroxyl-protective group(s) and/or the phosphate-protective group(s).

4. A production method according to claim 3, wherein the strong acid salt employed generates a halide ion or a

nitrate ion.

5. A method for producing 2'-deoxy-2'-fluoro-β-D-arabinonucleoside represented by formula (II):

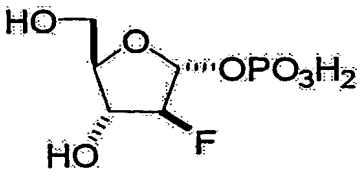
[F11]



(II)

(wherein B represents a base), which method comprises causing a nucleoside phosphorylase to act on α-1-phosphorylated-2-deoxy-2-fluoroarabinoside represented by formula (I):

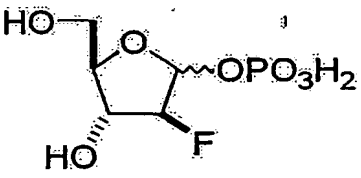
[F9]



(I)

or a mixture of α- and β-isomers of 1-phosphorylated-2-deoxy-2-fluoroarabinoside represented by formula (V'):

[F10]



(V')

and on a base.

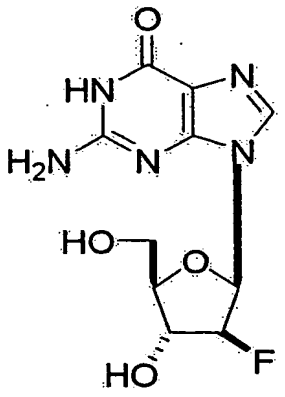
6. A production method according to claim 5, wherein the base is a purine base, or a purine base having a substituent selected from among a halogen atom, an alkyl

group, a haloalkyl group, an alkenyl group, a haloalkenyl group, an alkynyl group, an amino group, an alkylamino group, a hydroxyl group, a hydroxyamino group, an aminooxy group, an alkoxy group, a mercapto group, an alkylmercapto group, an aryl group, an aryloxy group, and a cyano group.

7. A production method according to claim 5 or 6, wherein the nucleoside phosphorylase is purine nucleoside phosphorylase.

8. A method for producing 9-(2-fluoro-β-D-arabinosyl)guanine represented by formula (VII):

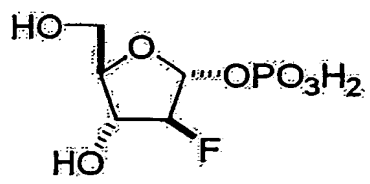
[F15]



(VII)

which method comprises causing a nucleoside phosphorylase to act on α-1-phosphorylated-2-deoxy-2-fluoroarabinoside represented by formula (I):

[F12]

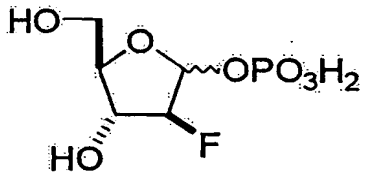


(I)

or a mixture of α- and β-isomers of 1-phosphorylated-2-deoxy-

2-fluoroarabinoside represented by formula (V'):

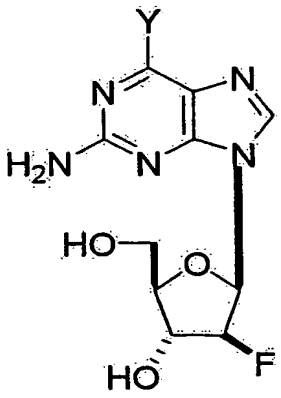
[F13]



(V')

and on a 2-amino-6-substituted purine, thereby yielding 2-amino-6-substituted-9-(2-fluoro-β-D-arabinosyl)purine represented by formula (VI):

[F14]



(VI)

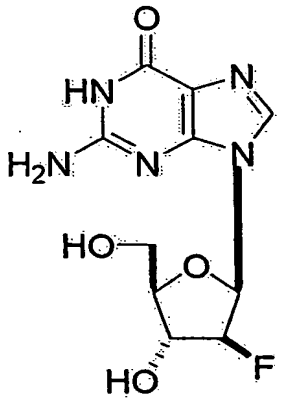
(wherein Y represents a substituent); and treating the thus-obtained purine nucleoside with a hydrolase.

9. A production method according to claim 8, wherein the 2-amino-6-substituted-purine is 2,6-diaminopurine.

10. A production method according to claim 8 or 9, wherein the hydrolase is deaminase.

11. A method for producing 9-(2-fluoro-β-D-arabinosyl)guanine represented by formula (VII):

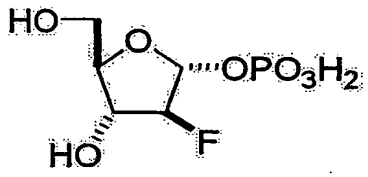
[F18]



(VII)

which method comprises causing a nucleoside phosphorylase and a nucleosidase to act on α-1-phosphorylated-2-deoxy-2-fluoroarabinoside represented by formula (I):

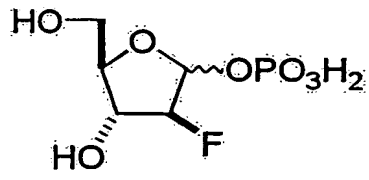
[F16]



(I)

or a mixture of α- and β-isomers of 1-phosphorylated-2-deoxy-2-fluoroarabinoside represented by formula (V'):

[F17]



(V')

and on guanosine 5'-monophosphate.

12. A production method according to claim 11, wherein the nucleoside phosphorylase is purine nucleoside phosphorylase.

13. A production method according to claim 11 or 12, wherein the nucleosidase is inosinate nucleosidase.